Environmental Financial Advisory Board
Recommendations and Final Report
on
Financing Opportunities
for the
Clean Water Action Plan

July 1999

Introduction:

The Environmental Financial Advisory Board (EFAB) offers the following recommendations and report on the Clean Water Action Plan to the Office of Water in the hope that they will prove helpful to its successful implementation. The results of our review are presented below beginning with two recommendations, followed by a report in three sections covering environmental finance trends and issues and outlining traditional and innovative finance options that could play a useful role in contending with how to pay issues.

The Board believes that a long term financing strategy would be highly desirable not only for the Action Plan but for all water programs faced with funding operating and capital needs. A financing strategy follows naturally from the development of the Action Plan and the Gap Analysis. Both efforts are closely related and lead directly to the major how to pay issues and options.

EFAB offers two recommendations for consideration by the Office of Water. We, of course, are available to discuss the recommendations and the report itself and assist in any other way possible.

Recommendations

I. **<u>Develop a Long Term Financing Strategy.</u>** EFAB recommends that the Office of Water establish an ad hoc workgroup charged with developing a proposed long term financing strategy for the water programs. If desired, the Board would be pleased to form the workgroup under the aegis of its charter as a federal advisory committee. Non-Board members of the workgroup could be appointed at the request of the Office of Water as expert witnesses.

The development of a financing strategy would address many vital, related trends and issues, several of which are described briefly in sections I and II of the report. While not intended to be a comprehensive list, the Board believes they would serve as a good starting point for the workgroup. Similarly, the new financing approaches and options outlined in section III give a good view of the many opportunities available to test new ideas and to build on and improve existing finance techniques and programs

The many funding options suggest that any plan or strategy to pay for the needs must be flexible and opportunistic in order to allow for uncertainty and take full advantage of all that is available. Other attributes of a strategy include a planning horizon of no less than 10 years detailing measurable near term actions on which there is a reasonable consensus.

II. <u>Develop a companion "Financing Guide for Implementation of the Clean Water Action Plan</u>." EFAB recommends the development of a comprehensive financing guide for federal, state, and local officials and non-governmental organizations on the latest ideas of environmental finance applicable to implementation of watershed restoration strategies.

EFAB and the Environmental Finance Center Network are available to help with the development of a guide which could draw from many information sources, including their recently updated "1999 Guidebook of Financial Tools" and the "Funding Sources" matrix of the Office of Water. The "Financing Guide" would be produced in hard copy, floppy disk, and compact disk, and be loaded on the Office of Water's website. Additionally, workshops, seminars and charrettes would use it in training and public education activities.

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Final Report

I. Summary of Major Trends Affecting Environmental Finance

A. **Funding environmental infrastructure.** The world of environmental finance is changing, witness several major trends:

- There is a major shift from historical dependency on annual appropriations and grants from the federal and state governments more toward reliance on permanent revolving funds making loans.
- There is a growing emphasis on leveraging sources of funds (notably the CWSRFs) as a key means of meeting high levels of present needs.
- There is increasing use of economic incentives and public-private cost sharing for environmental improvements and acquisition of real property for environmental benefits.
- There is increasing use of privatization in the provision of public purpose environmental services.
- There is increasing use of new financing mechanisms, such as mitigation banking with fungible cash transactions, particularly for land protection.
- There is increasing use of private debt and equity capital in environmental enterprises, for instance, as seen with recent venture capital investments in emerging environmental technologies concentrating on pollution prevention.

B. **Organization and management**. Perhaps less well observed has been the trend in the organization and management of programs designed to meet environmental needs, several of which are listed below.

- The creation of permanent SRF institutions in every state.
- A trend from single purpose to multi-purpose organizations with multiple beneficiaries.
- A trend to more comprehensive planning on a watershed and basin-wide basis.
- Greater emphasis on coordinated funding in government financial assistance programs, especially with the CWSRF programs.
- A gradual shift from a political jurisdictional perspective to a watershed or basin planning view.
- An improvement in public enterprise operations by the application of private sector techniques, such as system optimization.

C. **Changing needs and projects**. Accompanying the great success of federal and state financial assistance programs has been the recognition of new needs that are largely of a very different nature. Pollution from nonpoint or diffuse sources originates by definition from everywhere. Since treatment cannot be everywhere and certainly not instream, it follows that pollution prevention must be a major way of dealing with remaining surface and groundwater quality needs. Similarly, demand management measures, such as increasing utility rate block structures, will play an important role. The following are major emerging trends:

- New and changing needs with more attention to nonpoint source pollution.
- Greater emphasis on pollution prevention and source water protection.
- Greater emphasis on demand management, e.g., water conservation.
- Adoption of total maximum daily loads on a watershed basis, adding potential for upstream and downstream trading.
- "New"eligibilities introduced for CWSRF, e.g., loans for brownfields remediation, nonpoint source pollution prevention, and underground storage tank cleanup.
- Better definition and improved estimation of needs.

II. Principal Financing Issues Affecting Implementation of the Clean Water Action Plan

A. **The State Revolving Funds**. Some observers believe that the federal role is in a transition period following the initial capitalization period of the Clean Water SRFs (CWSRF). Among the questions that arise during a transition are: What should be the magnitude and duration of the federal funding commitment and what should it be based on? Should capitalization continue at current, higher, or even lower levels? What is the funding commitment to the Drinking Water SRFs (DWSRF) beyond its current authorization? Should CWSRF funding be used for other media? Should the CWSRF eligibilities be expanded to include such projects? Should federal construction grants have a role? If so, on what basis should construction grants be awarded - through means testing, environmental and public risk rankings, or by some other criteria?

B. **Improving access to affordable capital**. It is appropriate to finance capital projects with long useful lives, and financings must be on terms that are affordable. Borrowing in the credit markets and from public infrastructure programs is the most commonly used means to access capital. In most cases, borrowing by communities to meet clean water and drinking water needs is affordable. But for certain communities unable to meet means tests for creditworthiness, assistance will be needed to make capital affordable.

Tactics to make capital more affordable include: Below market lending (e.g., no interest loans, negative interest loans, and interest rate buy downs) and extended loan terms (See EFAB report "Why Longer Loan Terms are Prudent," November 1997).

C. **Ensuring financially sustainable environmental protection systems**. The revenue streams for environmental protection systems must be sufficient to pay for the debt service on funds borrowed to

finance capital improvements as well as pay for operating and maintenance costs. Sustainable systems are those able to function indefinitely in compliance with all applicable environmental standards. Many investments in implementation of the Action Plan will not be in traditional clean water infrastructure such as wastewater treatment facilities. Instead, public spending will also be directed to clean water investments on property which may be publicly or privately owned. A distinguishing characteristic of these investments is that in most cases they do not generate revenue streams, hence the need to dedicate revenues from other, often unrelated sources, to pay operation, maintenance and debt service costs.

D. **Spending capital dollars on the "right" projects**. There is continuing debate concerning the best allocation of capital dollars. For example, should the allocation be based exclusively on financial need or should funding also be available for projects which provide environmental and public health benefits for which other non-subsidized funding sources are available? Both approaches can lay legitimate claim to scarce resources. A challenge is to craft means of accommodating both goals, especially in funding watershed restoration projects.

E. **Funding a new class of borrowers**. Complicating a watershed approach is the appearance of a new class of borrowers who are different from the traditional public works department or authority. These are usually private landowners but may include other public and nonprofit landholders as well. These many small, private borrowers, with diffuse and fragmented credit needs, mirror the pollution problem itself. What kinds of financial assistance and incentives are most effective to change behaviors and what are the most efficient ways to deliver these? What sorts of dedicated revenue streams are available for payment of debt service on money borrowed for nonrevenue producing projects?

F. **Closing the fiscal gap between environmental program operating and capital needs and available resources.** EPA's Office of Water is nearing completion of the Gap Analysis which will provide an informed estimate of the present and future shortfalls in funding for water programs at federal, state and local levels. The ambitious goals of the Action Plan figure prominently in this analysis. What are the practical and realistic means of obtaining more direct federal appropriations? What is the role of other funding sources?

G. **Allocating funding based on watershed and basin priorities where their boundaries include all or parts of several states**. Does effective implementation of the Action Plan depend on allocating some federal funding to multi-state environmental programs, such as a river basin revolving fund? How would this work? For example, SRFs might enter into interstate compacts where multi-state basin projects would be jointly financed.

H. **Structuring appropriate incentives for the private sector, including nonprofits**. The Action Plan stresses the importance of private landowners to its successful implementation (Action Plan at p.49). It describes several innovative approaches to provide incentives for pollution prevention, primarily to farmers. The Board fully endorses these valuable programs.

The buy-in of the private sector is critical to the success of the Action Plan. For the most part, the remaining main surface water quality problems stem largely from privately owned land. Absent a regulatory framework, what are the means and incentives to get the cooperation of the private sector? What and how should the federal government help make this happen?

Generally, public monies should be spent for public benefits, as opposed to creating primarily private benefits. Government financial assistance programs should not create expectations within the private sector for subsidies and entitlements. Clean water investments in the private sector for public benefits must be supported by sufficient revenue streams to ensure adequate financial capacity and public return on the investments.

III. New Approaches. Existing local, state, and federal finance programs and tools cannot do the entire job. We need to maintain progress achieved thus far, but the challenge has broadened markedly. Existing financial institutions and tools have been highly successful to solve water quality problems that address point sources. In particular, the CWSRFs were established to help meet these traditional needs and have expanded the original perimeters of the program. Nevertheless, the trends noted in section I and the financing issues in section II underscore the reasons for new approaches.

While EFAB cannot address all of the possibilities and options to help pay for watershed restoration strategies, it can focus on key ones that appear to merit further consideration by EPA. An extensive portfolio of new approaches follows:

A. **Program options**. Financing programs that support watershed restoration strategies must be flexible enough to meet the differing needs of both public and private entities. The programs must include the authority to lend directly to the private sector, (particularly private sector landowners or other title holders) or to lend through intermediaries. And the programs must be sufficient to get the job done. The options listed below suggest significant opportunities to adapt and improve existing financial assistance programs and develop new ones all geared toward successful implementation of the Action Plan.

1. **Forging closer financing partnerships**.

There are a growing number of successful collaborations between financial assistance programs. The Department of Agriculture's Rural Utilities Program and the Clean Water SRFs have funded projects together and have an agreement to expand their cooperative activities. This sort of interagency partnership should be pursued aggressively.

2. **Expanding the scope of the CWSRFs**.

In 1987, Congress created the CWSRF program as a measure to finance water quality improvements projects. Administered by the states, the CWSRFs provide loans, unlike the previous long standing practice of federal categorical grant assistance. The CWSRFs are capitalized by annual "capitalization grants" from EPA. In total, they now have over $27 billion in assets and have made over $23 billion in loans. At present, the CWSRFs annually fund about $3 billion worth of loans for water quality projects.

The CWSRFs work like banks. Federal and state contributions are used to capitalize or set-up the funds. These funds then are used to make low-interest loans for water quality projects. States may chose to leverage their capitalization grants by issuing bonds with the capitalized-grants as collateral. Funds are repaid by recipients to the SRFs over the 20 year term of the loan. Repaid funds are used to finance new loans, thus the revolving aspect of the funds.

The CWSRFs have traditionally allocated their loan funds to municipal wastewater treatment systems. Increasingly, the CWSRFs are funding other water quality improvement projects, such as non-point source controls and other types of watershed projects. Thus, the CWSRFs have become an important source of funding for environmental stewardship practices and watershed restoration strategies.

Wetlands projects typically fall under approved state non-point source management plans or are included in national estuary management plans. Constructed wetlands may be considered wastewater or stormwater management projects and are also eligible for funding.

CWSRF fundable projects include:

- Wetlands restoration - remediation, clean up, habitat enhancement.
- Wetlands protection - buffer zones, purchases, non-point source measures
- Constructed wetlands - for treatment of stormwater or wastewater, including capacity to ensure habitat values.
- Wetlands mitigation banks.

While finding a source of repayment may prove challenging, it need not be unnecessarily burdensome. Many users of the CWSRFs have demonstrated a high level of creativity in developing sources of repayments. The source of repayment need not come from the project itself. Some possibilities include:

- Fees paid by developers on other lands.
- Recreational fees (fishing license or park entrance).
- Dedicated portion of local, county, or state taxes or fees.
- Property owner's ability to pay (determined during loan application).
- Donations or dues made to non-profit groups.
- Stormwater management fees, wastewater user charges.

EPA has recently interpreted its requirements to allow financing of projects beyond 20 years under certain circumstances. EFAB encourages the agency to be flexible in authorizing the types of projects can be financed with extended loan terms.

3. **Considering new institutional options**.

These options have the common characteristics of integrating priorities, expanding eligibilities, and pooling and leveraging assets to improve the efficiency and effectiveness of funding assistance.

a. Provide states the option to combine their CWSRF and DWSRF. A "master" SRF

makes sense from an efficiency standpoint; however, administrative and statutory differences in how the two programs are run would pose significant issues at the federal level.

b. Provide states the option and incentives to create an Environmental SRF (ESRF) out of their existing SRF programs, with multi-media eligibilities and state flexibility to determine project priorities among the new eligibilities.

Significant environmental benefits could be achieved in many states by expanding the current SRF model to a comprehensive ESRF. An ESRF could undertake a much broader range of environmental financing, not necessarily infrastructure or facility based, but which substantially affects water quality. Possible projects could include solid waste projects and more comprehensive brownfields remediation.

The benefits of this approach would be significant. Most states have fully developed SRF procedures, which could be readily expanded to encompass additional projects qualifying for financing. Expansion of an existing program, instead of developing additional stand-alone programs, would provide administrative efficiencies, resulting in less administrative costs for states and borrowers. The increased pace of project funding would provide environmental benefits sooner. Administration could be structured to facilitate improved access for borrowers. Analysis and funding of an increased scope of eligible projects would provide greater awareness of broad environmental issues. Finally, greater flexibility would allow states to address specific environmental risk more effectively in their priority setting through intended use plans. (An appendix to this report carries a draft concept paper on the ESRF concept prepared by EFAB member Stephen Mahfood.)

c. Provide states the incentives to create public watershed finance authorities with a revenue raising capability based on such sources as effluent discharges fees, water consumption fees, or green taxes. A watershed finance authority could function as a revolving fund, a direct loan program, a credit enhancement program, a grant program, or some combination of these. As state-sanctioned entities, they would operate as intrastate enterprise funds with tax-exempt borrowing powers for watershed restoration projects within a large watershed. The timing and magnitude of their financial assistance would be guided by the watershed restoration strategies. A particular advantage they have is that the revenues raised to capitalize the authorities would be expended within the watershed either directly for loans or grants to projects or indirectly to secure borrowings of the authority. State and federal governments could provide additional incentives such as financial and technical assistance. Establishing the revenue sources and conflicts with existing water and wastewater utilities would be probable major issues.

d. Create basin-wide, multi-state, revolving fund authorities (MSRF) to direct investment into water projects. Possibly patterned after river basin commissions, the MSRF idea has a number of advantages in terms of implementing watershed restoration strategies. It is a way of coordinating, prioritizing, and delivering financial assistance to projects having the greatest basin-wide

benefits. These projects might not be the same that would receive funding support from existing programs. As with the watershed finance authority, a MSRF could receive its funding from revenue sources within the basin. Both probably offer the most ideal institutional approach to paying for watershed restoration strategies. Watershed and basin finance authorities might exist apart from the SRF programs or could conceivably be established by several SRFs. (EFAB member Michael Finnegan is preparing a separate report on the MSRF concept.)

The Office of Water's Policy and Guidance document clarifying the eligibility of nonpoint source and estuary projects for SRF assistance and proposing a framework for "equal consideration of all eligible water quality projects" is an important step in the integration of project development and financial assistance decisions inherent in the institutional options briefly discussed above.

The idea of a national environmental trust fund capitalized through revenues from environmental fees and taxes is addressed in section IIIG.

4. **Expanding the role of the private non-profit [e.g., Nature Conservancy and their Forest Bank program] and the for-profit sectors, through assistance and incentives**.

The nonprofit programs are well known. The Office of Water is to be commended for its effective efforts in reaching out to this community and enlisting its services in implementation of the Action Plan. Regarding for-profit entities, developing an expanded role needs to recognize the importance of ensuring public assistance generates public benefits. Sections IIID, E,& F list several incentives to encourage greater private sector involvement in watershed restoration projects.

B. **Enhanced leveraging options.** Leveraging achieves a greater efficiency for funding programs. It is an extremely flexible tool that may be customized to a given situation. A continuum of options runs from the highly leveraged to the least leveraged. Where financial need is not a prime issue, highly leveraged options, such as guaranties, can focus on environmental risk-based projects. Where financial need is a major barrier, then low or no leveraged options, such as grants, may be more appropriate. The chart following this page depicts the relationship between leveraging financial assistance programs and the basis for their subsidy decisions. Of special note, leveraging can be increased in the case of lending to the private sector through using, for example, higher rates and matching requirements.

Highly leveraged	Credit enhancements [environmental risk-based]
	Leveraged Revolving Funds lending at near or market rate
	Leveraged Revolving Funds lending at below market
	Revolving Funds [also non-revolving lending programs]
	Loan and grant combinations
	Partial Grants, requiring match
Not leveraged	100% Grants [financial needs-based]

A watershed financial assistance program that has all of the above authorities plus the flexibility to structure and allocate financial assistance based on financial need and environmental and public health risk would be best suited to supporting watershed restoration projects.

C. **Pooling options.** Pooling is the combining or merging of financial assets (including real property) to more efficiently provide financial assistance on a more affordable basis for the recipients. Pooling is especially well suited to watershed restoration projects where smaller capital investments must be made to many individual landowners who may have limited resources.

An excellent example of pooling in this context is the bond bank, a financing mechanism that has been used with great success by several states for many years. Designed to help smaller communities pay for infrastructure investments by borrowing on their behalf using the credit rating of the state, bond banks fund loans with the proceeds of a state bond issue. Communities thus pay far less they would otherwise have to if they each borrowed on their own. While used to date primarily to finance traditional infrastructure, bond banks could play an important role in assisting watershed restoration projects in rural areas designed to prevent water pollution.

Other kinds of pooling include forest banks that combine resource rights on multiple parcels of land; mitigation banks that bank wetlands and issue mitigation credits based on contributions; and land reclamation banks that purchase and clean-up sites for sale or lease to the private sector. Pollution/treatment trading regimes convert a public savings in point source treatment costs into pooled capital for pollution prevention investment.

D. **Credit incentives regarding bonds for environmental purposes.** Tax code provisions can significantly affect the cost of financing public purpose environmental infrastructure. Changes in the tax code could offer important opportunities to lower the costs of, and increase investments in, environmental facilities. Generally lower costs would result from a relaxation of restrictions on the sale and retirement of bonds, as well as the tax treatment of earnings from the investment of bonds proceeds. Increased investments can also be generated by adopting incentives for greater private sector participation in the operation and ownership of public purpose treatment facilities and in pollution prevention projects on private property.

Since greater than 75 percent of the capital needed for new facilities and the upgrade, expansion, rehabilitation of existing facilities comes from the sale of tax-exempt bonds, most attention has centered on this source in terms of options; however, to implement the Action Plan, we need to also consider the use of other tax incentives to encourage pollution prevention and private sector investment in public purpose environmental services and facilities. Many of the following ideas are presented in (or adapted from) a 1991 EFAB Advisory: "Incentives for Environmental Investment: Changing Behavior

and Building Capital."

1. **Reclassification.**

Numerous proposals have been made regarding bond reclassification which essentially would transfer bonds now classified as private activity bonds into a governmental bond category. Reclassification proposals would probably have the greatest impact in terms of cost savings to issuers. Three ideas are to:

a. Reclassify all public-purpose bonds for water and wastewater projects as tax-exempt governmental bonds. This would include eligibility for privately owned and operated facilities where the primary benefits of operation accrue to the community as a whole and not to private parties.

b. Reclassify as "Clean Water Bonds" any state or local issue where 95 percent of the proceeds are used to provide public-purpose environmental benefits needed to carry out watershed restoration strategies

c. Reclassify as "Mandated Infrastructure Bonds" any bonds sold to finance the construction or acquisition of water and wastewater facilities mandated by the federal government, including renovations and rehabilitation.

2. **Private activity bonds for watershed restoration strategies**.

a. Broaden eligibility to include pollution prevention investments as a qualifying purpose.

b. Obtain a volume cap exemption or expansion for watershed restoration projects. Modify the definition of exempt facilities to include those serving a public purpose, i.e., a watershed restoration project, regardless whether the project itself is publicly or privately owned.

c. Provide relief from arbitrage restrictions on bond issues supporting watershed restoration strategies.

3. **Tax credit bonds**.

The Administration has recently proposed a tax credit bond called "Better America Bonds." These bonds would provide holders with a tax credit in lieu of interest, which provides considerable savings to state, local, and tribal issuers. The bond proceeds would be used for a number of qualified purposes (e.g., open space and buffer strip acquisition) that fit well with implementation of the Action Plan. The Board has offered its services in obtaining public comment and in providing technical advice to support this innovative program.

4. **Arbitrage rebate**.

a. Allow the reinvestment of arbitrage earnings for environmental bonds without penalty so long as the bond proceeds are spent over a reasonable period of time for qualified purposes.

b. Exempt SRF bond proceeds and debt service reserves from arbitrage restrictions so long as the earnings are used for qualified purposes.

5. **Depreciation.**

A seven year depreciation period could be allowed for pollution prevention and control environmental facilities if they are financed with tax-exempt bonds or a 10 depreciation period if the facilities are leased to a tax-exempt entity.

E. **Tax incentives.** The tax code could be modified to provide a variety of benefits and incentives to those who wish to pursue stewardship practices on their land to protect water quality. Various adjustments in tax codes and policy can be implemented to change behaviors, create incentives or disincentives for stewardship, and to alter patterns of natural resources utilization. The following examples illustrate:

1. **Ad valorem taxation**.

Lands appraised for property taxes at the "highest and best use" can impose upward pressure on land values and therefore increase the incentive to convert open space land to development uses. To offset this problem, property tax stabilization or "current use" programs have been enacted in several states to provide an economic incentive to maintaining farms, open space, forest lands. Based on criteria (usually including some measure of ecological value or watershed integrity), property tax burdens are lowered in return for commitments by the land owner for stewardship and maintaining the integrity of the land. Management agreements (see section F below) may be used to ensure the property serves its intended purpose.

2. **Estate taxation**.

Large properties that have high market values but low income production may face formidable estate tax consequences upon the death of the owner. Current tax law can cause these properties (often with high habitat/clean water value) to be sold or subdivided to pay the estate taxes due. (The Taxpayer Relief Act of 1997 gradually increases the Federal Unified Estate and Gift Tax Credit from an exemption of $600,000 to $1,000,000). To offset this problem, it may be possible to further raise the exempted value of the estate when the property meets certain criteria of watershed

value. Also, various options currently exist through the mechanisms of dedicating conservation easements to the property. (See also American Farm and Ranch Protection Act, Section 2031c).

3. **Tax credits**.

In general, tax policy should target tax credits to investments intended to prevent or reduce pollution. For example, tax credits could be claimed for expenses incurred by land owner in improving degraded habitat or creating new habitat for target species. Such expenses would qualify for tax treatment as capital costs incurred, rather than continuing management and maintenance expenses. Unfortunately, many who might otherwise use tax credits have little or no tax liability to apply a credit against. One measure to deal with this concern makes the credit transferable, allowing it to be sold to an intermediary. Another example is the use of credits as incentives to establish a pollution credit exchange.

4. **Capital gains**.

Capital gains could be reduced (either by adjusting the basis for the gain or by decreasing the capital gain tax rate) for the sale of the land or natural resource assets that have been managed over the long term using stewardship practices. Capital gains relief could motivate owners to manage their "natural capital" for long term sustainability.

5. **Tax deductions.**

Tax deductions could be taken for income derived from economic activity on land managed fully and perpetually for species of concern under an approved Habitat Conservation Plan (HCP) pursuant to the Endangered Species Act.

6. **Real estate transfer taxes**.

Based on local housing market conditions and the general appreciation of real estate value, the market prices of urban land and dwellings can increase substantially over time. This increment is essentially an " unearned benefit" to the seller upon the sale of the property. The State of Maryland (through its Smart Growth Program) is seeking to capture the increased value of urban lands and to transfer some of that increment of value to the preservation of rural lands. A real estate transfer tax is assessed (.05% of transaction value) on the sale of urban property; revenues are then applied to: 1) directly purchase rural/open lands as fee simple; 2) directly purchase development rights or conservation easements; or 3) service general obligation bonds used to acquire open lands for land preservation and conservation management.

F. **Economic incentives for holders of interests in real property**.

Land owners (or others who own interests in real property) who wish to pursue stewardship of

their lands may avail themselves of a variety of economic incentives. Economic incentives (as used in this section) are based upon models of cost-sharing; for instance, when private land is used to create public benefit and public funds are proffered in response to private matching or cost-share formulas. Such cost-sharing mechanisms convey a sense of public-private shared responsibility and mutual benefit without conveying an expectation of entitlement. Economic incentives are organized below into two categories: Deed or title adjustment mechanisms and management agreements.

1. **Deed or title adjustment mechanisms**.

Private landowners who wish to practice stewardship and voluntarily protect and conserve natural resources on their properties may consider a variety of tools involving deed or title adjustments.

a. **Conservation easements**.

A landowner grants a nonpossessory interest in the property to a third party (usually a nonprofit conservation organization or governmental agency) for the purpose of preventing development of property having important natural, agricultural, scenic, or historic value (i.e., the development value is taken off the land). A conservation easement should "run with the land" and encumber the land in perpetuity.

Conservation easements may be sold to produce direct income benefits to the seller. Indeed, many countries in the west are setting-up programs to purchase development rights or conservation easements from willing sellers, primarily to sustain lands in ranching/agricultural production. Conservation easements may be donated to produce income tax deductions and/or tax credits.

An important new tax development was recently enacted in the American Farm and Ranch Protection Act, Section 2031 (c), "Estate Tax with Respect to Land Subject to a Qualified Conservation Easement." This provides the basis to exclude from estate valuation a portion of the land value in addition to the reduction in value already attributable to the easement itself.

b. **Remainder interests or life estates**.

Dedication of a remainder interest transfers full or partial interest in a property to a conservation organization after the death of the landowner. The landowner continues to enjoy the rights the landowner has reserved during his or her lifetime, subject to the rights of the remaindermen, while practicing stewardship for future protection. Donation of a remainder interest for conservation purposes may qualify for a tax deduction.

c. **Transfer of full title**.

Landowners may choose to sell or donate their entire interest land to a conservation organization or governmental agency to ensure permanent protection of the natural resources values (also known as "in fee" dedication). Donations may yield favorable tax benefits. Outright sales of such property may be impacted by capital gain considerations.

2. **Management agreements**.

Private landowners who do not wish to relinquish any property ownership rights may voluntarily enter into a management agreement with a nonprofit organization or government resource agency to achieve habitat improvements on the land along with long term stewardship. Such agreements are usually based on cost-sharing arrangement. The landowner may receive technical assistance and compensation for the use of his land. Various specific programs exist; for example:

a. **Environmental Quality Incentives Programs (EQIP).**

Landowners may enter into agreements with the Natural Resources Conservation Service (NCRS) to implement on-farm conservation measures to reduce soil loss, non-point source water pollution, and livestock-related conservation programs. The landowner pays the cost of establishing approved conservation practices and is reimbursed for 50-75% of those costs. This program advances the concepts of private stewardship of the land and the generation of long term public benefits.

b. **Water Bank Program**.

Landowners with significant migratory waterfowl habitat (usually inland freshwater wetlands) on their property can enter into a ten-year with NRCS to manage the property to maintain or enhance habitat values. Landowners receive payments on an annual per-acre basis to help offset management costs.

c. **Partners for Wildlife**.

Landowners may partner with the U.S. Fish and Wildlife Service to restore wildlife habitat, including degraded or converted wetlands. Up to 50% of the project costs may be cost-shared. Project priority is given to areas of concern: habitat for endangered species, migratory waterfowl, spawning for anadromous fish, native plant communities, etc. Projects usually run for 10 years or more. Costs to the landowner may be covered by in-kind services, which further stimulates the stewardship ethic.

d. **Forest Stewardship Program**.

Landowners may receive up to 75% of the costs of preparing and implementing

a Forest Stewardship Plan to protect and enhance their forest lands and associated wetlands. The plans are intended to promote stewardship of the forest cover, as well as fish and wildlife habitat, water quality, and recreational and aesthetic values of the land. Projects may cost-share up to $10,000/year; for projects covering up to 5,000 acres. Agreements run for at least 10 years.

e. **Wetland Reserve Program (WRP).**

The Wetlands Reserve Program is a permanent conservation easement for a habitat restoration program primarily on wetlands in agricultural production. The focus is on restoration of farmed/prior converted wetlands, protecting the functions and values of wetlands, to improve water quality, flood water retention, and groundwater recharge. The program, managed by NRCS, USFWS, ASCS, offers cash payment to landowners for placing permanent conservation easements on their wetland property, as well as cost-share assistance for restoration work. Cash payment for the easement is based on fair market values.

f. **Conservation Reserve Program (CRP)**.

The Conservation Reserve Program provides annual rental payments to farmers who remove from production (for a minimum of 10 years) cropland on highly erodible or otherwise environmental sensitive terrain. In addition, the farmer must carry out, at 50% cost-share, certain conservation measures over the life of the contract. The annual rental payments are based on a bidding process to determine the payment for taking land out of production; the maximum rental limitations applicable to commodity price support and production adjustment programs. Once the land is enrolled, the land cannot be farmed for the duration of the contract (usually 10 years).

g. **Conservation Reserve - Enhanced**.

Under the 1996 Farm Bill, USDA's Conservation Reserve program can be combined with an approved state program. The federal program (as above) is augmented by state funds to create permanent easements and to help pay for planning and natural resources restoration costs. The primary purpose of the enhanced program is to help landowners create riparian buffers of trees and grasses along water courses to provide habitat and to filter pollutants. The total amount of funds available varies by state; but these funds provide a compelling incentive for stewardship to occur.

h. **Forest Banks**.

Pioneered by The Nature Conservancy, a Forest Bank pools the forest management rights on several parcels of privately owned land. In return, the owners receive an annual payment from timber harvesting on participating properties and sound stewardship of their forests. Much forested land is privately owned in small parcels and is often not well managed. Forest Banks make available the same economies of scale achieved from forest management on large industrial tracts.

These banks could play an important part in implementing watershed restoration strategies in rural areas.

G. **Environmental fee and tax options.**

The Office of Water's "Alternative Funding Study: Water Quality Fees and Debt Financing Issues, Final Report to Congress, June 1996," prepared by the Environmental Finance Center at the Maxwell School, Syracuse University is an excellent overview of fees and debt financing that could be used to capitalize environmental infrastructure financing programs at the federal and state levels. The report analyzes several promising fee options, including: effluent or discharge fees, water use and other resource "severance" fees; permit and administrative service fees; chemical feedstock fees; and green product sales fees on products adversely affecting water. Each fee is evaluated using several efficiency, effectiveness and equity-based criteria such as revenue size and predictability, cost benefit linkage, and collectability.

Importantly, the report dwelt on the revenue raising potential of fees instead of their capacity to modify behaviors, believing that a policy emphasis on the latter would undercut revenue goals. Several public meeting were held with the majority view that fees should be broadly based, that "everyone should pay a little," (p.iii). Strict application of the "polluter pays" principle as a revenue source did not receive wide support. On the other hand there was "strong agreement...for use of water-related fees, as opposed to non-environmental fees such as 'sin' taxes, lotteries, or general sales set-asides."

The report concludes by offering four generic "fee-based intergovernmental models" for further consideration. As described in the Executive Summary, they are:

1. **The federal green fee model**.

The federal green model relies on new federal green product fees collected by the Internal Revenue Service and deposited in a new Federal Clean Water Trust Fund. The Fund would make capitalization grants to SRFs or other state funds for financing local water-related projects.

2. **The federal-state water use/match fee model.**

This model combines state "water use" fees (both public supply and direct withdrawals) with a new 33% federal match derived from federal green fees. States choose whether to participate, with the federal match incentive offered through year-end state capitalization grants, and all fees being dedicated to water-related project financing.

3. **The voluntary state fee incentive model** .

The incentive model is similar to #2 with three exceptions - states may select any capital-generating fee they see fit (water-related or not), the federal government may use fees or appropriations for its match, and the match is increased to 50%.

4. **The watershed fee model.**

The watershed fee model directs financing to specific watersheds an/or water bodies, sub-state or multi-state and relies on watershed protection type fees, state or local, such as special assessments district fees, development impact fees, facility construction, certification, and hook-up fees, well and septage fees, and others designed with protection needs in mind. Federal and/or state flexible cost-sharing subsides may be offered.

These models, with the exception of #4, could be implemented through a national environmental trust fund that would receive deposits from fee revenues and matching funds and make disbursement There has been considerable recent interest in an environmental trust fund among water program constituencies. Trust funds of course are not new and offer very real and significant advantages, especially if their enabling authority protects deposit from being diverted to other non-related purposes. A threshold issue with any separate accounting of this kind is the source of revenues and how and for what purpose are the deposits expended.

Model 4 requires a watershed or basin-wide fund, which would work well with either a watershed finance authority or a multi-state revolving fund (section IIIA).

While EFAB does not at this time endorse any of these fee models, nevertheless, the Board believes that EPA should carefully examine these and perhaps other fee models. Other sources of revenue to the water programs may well play a vital role in paying for implementation of the watershed restoration strategies and the larger needs identified in the gap analysis.

H. **Federal policy options.** Federal policies governing the use of public lands and resources, federal fees, and federal funding for infrastructure could be used to support a variety of stewardship practices.

1. **Feebate approaches**.

Private parties pay certain fees for access to - and use of - natural resources on public lands. There is growing interest in realigning the fee structure/price structure to reflect more efficient market transactions and improve market signals. A potential avenue of fee reform could involve gradual step-wise adjustments of fees over time, with the provision of a rebate (or "feebate") of a portion of the increased fee commensurate with good environmental management practices. Such a "feebate" could provide a compelling financial incentive for stewardship practices in the use of natural resources on public lands. Moreover, such a "feebate" program could be revenue neutral, wherein the increased fee revenue is the source of the rebate proceeds.

2. **Federal water for habitat**.

Federal water (i.e., water resources developed under a federal water project) traditionally has been allocated free-of-charge to benefit the aquatic habitat values of federally designated refuges. Even though such water is often surplus and is applied in the off season (when irrigation water is not otherwise needed), it provides essential habitat for migrating waterfowl.

Under an experiment in the Central Valley of California, federal water is provided free-of-charge to flood privately-owned rice paddies in the off season after the rice harvest. The flooded rice paddies, with their abundant stubble and residual feed, provide an extraordinary feeding and resting stop for waterfowl on the Pacific Flyway. Federal water applied for free thus creates extraordinary habitat value (and effectively extends the acreage of the limited Federal Refuges). These benefits could not otherwise be easily created by direct federal funding mechanisms. Moreover, the flooded paddies do not need to be burned to remove stubble, thus avoiding the smoke that hangs in the winter inversions of the Valley.

3. **Federal flood management**.

Federal funds appropriated for structural flood control works (dams, levees, channels) could be reprogrammed to pursue non-structural measures if the flood control benefits created exceed that of structural works. The non-structural measures could include direct purchase of lands in the flood plain; relocation of urban settlements to higher ground; purchase of flood easements or right-of-way; levee set backs; re-creation of riparian/wetland habitats to provide flood water detention and absorption.

Moreover, federal funds allocated by the Federal Emergency Management Agency for flood disaster relief and recovery could be used to fund non-structural alternatives (as above) to avoid recurrences of the flood patterns.

Such measures taken for flood control purposes could enable the creation of permanent riparian and/or wetland habitats which would otherwise be lost to levees, dikes, and concrete channels.

4. **Special Restoration Fund**.

The Central Valley Project Improvement Act (CVPIA) (PL 102-575, title 34) created a special fund, based on a complex set of water rates and surcharges, to pay for various ecological enhancement and restoration projects in the Central Valley of California. The long-standing and continuing losses of habitat and fish and wildlife resources as a result of the Federal Central Valley Project water diversions are to be addressed by this special restoration fund.

Revenues flow into the fund from contract renewal charges, water transfer charges,

tiered water prices, various surcharges, and additional mitigation payments. These total revenues are then appropriated by Congress to finance various habitat restoration projects and other fish and wildlife enhancements. The annual revenues thus created equal about $30 million per year (adjusted for 10 year rolling averages).

The U.S. Bureau of Reclamation has set up a Restoration Fund Roundtable (comprised of all stakeholders) to advise it on priorities to expend the Fund resources in various projects for ecological restoration in the Central Valley.

5. **Land and Water Conservation Fund**.

The Land and Water Conservation Fund could be authorized to provide increased federal cost-sharing monies in support of private land owners who participate in a Habitat Conservation Plan (HCP) for the protection of endangered species. Such federal cost sharing can be a positive contribution to private lands participation in a HCP, counteracting the perceived negative value (or "taking") that attends lands with endangered species.

I. **Financial outreach services**. Over the past thirty years, the state and federal governments have gained considerable experience with providing subsidies to local governments for the planning, design, and construction of environmental infrastructure. A core lesson learned has been the importance of ensuring that recipients have the capacity to pay for operation, maintenance and debt service. As financial assistance moves more toward loans and away from grants, the overall creditworthiness of the recipients has become a key consideration. If capacity and creditworthiness are inadequate, the entire infrastructure investment is potentially unsustainable and in jeopardy. Today, it is generally recognized that technical assistance and capacity building are vital adjuncts to any successful financial assistance program.

Since so much of the successful implementation of the Action Plan and its watershed restoration strategies depends on in-the-field, hands-on kinds of activities and projects; so too must the supporting outreach. The Board would like to note one very good example. The agency-sponsored Environmental Finance Centers employ a technique called a "Charrette" which is a panel of finance experts (including state officials) that meets with local government officials who brief them on the financing and technical issues facing their community. The panel engages in questions with the officials and reports back with specific recommendations on remedial actions.

Charrettes offer a great deal of promise as a means of obtaining governmental buy-in at the local level, which critically important to successful implementation of watershed restoration strategies. At the very least, charrettes provide an avenue for productive discussions among those key people from the public and private sectors with a serious interest and concern as they face with the how to pay questions. As part of the Action Plan implementation, The Office of Water has already proposed using charrettes to the train government officials in financing options.

Several very good financial outreach programs are operating at the state and federal levels. The Board believes that improved coordination of their work would be a major boon to implementation of the Action Plan.

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Appendix

Environmental State Revolving Funds: Developing a Model To Expand the Scope of the SRF

The Federal Water Quality Act of 1987 made provisions for the establishment of state loan programs, with the purpose of providing financial assistance for municipal sewage and certain other water pollution control programs. In the 1996 amendments of the federal Safe Drinking Water Act, an additional loan program was established to finance various drinking water projects. As these programs have been developed, project priority has generally been driven by the need for compliance at some federally mandated level. These programs have developed into specific "buckets" of funds, earmarked for a specific use and for that use only.

Environmental quality, however, involves complex and inter-related issues of water, air and land. In many instances, providing financing for a specific project, such as a wastewater treatment plant, may only provide narrowly defined or focused relief for a water quality problem covering a larger geographic area. Issues of population, economic development, land use, geology, etc., vary widely from state to state and region to region, affecting where and how financial resources can provide the highest benefit.

Significant environmental benefits could be achieved in many states by expanding the current State Revolving Fund model to a comprehensive environmental SRF. An environmental SRF could undertake a much broader range of environmental financing, not necessarily infrastructure or facility based, but which substantially affects water quality. Possible projects could include solid waste projects, brownfields remediation, and a wider range of non-point source projects.

Several states, including New York and Ohio, have programs which could be considered environmental SRF's. The Ohio Water Development Authority (the "Authority") serves as a very good prototype of how an environmental SRF could be structured. The Authority has other programs unrelated to issuance of its Water Quality Bonds. Its Community Assistance Program provides financing to governmental agencies undertaking wastewater and water supply projects at extended terms and below market rates to alleviate undue hardship for qualifying borrowers. In 1991, the Authority developed the Solid Waste Financing Program to provide financing for governmental agencies to implement solid waste management plans. Eligible projects include materials recovery and composting facilities, transfer stations, landfills and incinerators.

In 1994, the Ohio General Assembly enacted legislation to establish a Voluntary Action Program to encourage and facilitate the remediation of property contaminated by petroleum or hazardous substances. The Authority has the power to make loans to finance "voluntary actions", which includes measures that may be taken to identify and address potential sources of such property

contamination. In 1995, the Authority established an Economic Development Loan Program for the purpose of making loans to governmental agencies for water and wastewater improvement projects recommended by the Ohio Department of Development based upon expected economic development benefits.

In addition, the Authority is authorized to engage in research and development with respect to wastewater, water management facilities, solid waste facilities, and energy resource development facilities, and has established a grant program for qualifying R&D projects meeting certain guidelines. Grants are subject to available funds and recommendation by the director of a department of state government which is responsible for applicable oversight. Priority is given to projects that have statewide environmental and/or natural resources applications.

Key to the Ohio program's success is the flexibility they possess in funding the various programs they deem important. Because the Authority's initial funding was a grant from the state many years ago, few restrictions are placed on how it can be employed. This is very different from how the current-day federal clean water and drinking water programs are structured, which have numerous restrictions on their use, particularly with respect to financing. For example, Ohio makes surpluses from one program available to another. This flexibility not only enables programs to be developed quickly to address various needs but also enhances financing flexibility by allowing the surplus from one program to secure that of another.

The Ohio Water Development Authority model as a template for the concept of an environmental SRF could be expanded moderately or greatly as desired. Eligible projects could include wastewater, non-point sources, landfill closures, brownfields, agricultural waste and CAFO's could be easily considered. Specific air quality issues, as they relate to water quality, could be addressed through emission control financing and development of alternative energy sources as opposed to burning fossil fuels.

The benefits of this approach would be significant. Most states have fully developed SRF procedures, which could be readily expanded to encompass additional projects qualifying for financing. Expansion of an existing program, instead of developing additional stand-alone programs, would provide administrative efficiencies, resulting in less administrative costs for states and borrowers. The increased pace of project funding would provide environmental benefits sooner. Administration could be structured to facilitate improved access for borrowers.
Analysis and funding of an increased scope of eligible projects would provide greater awareness of broad environmental issues. Finally, greater flexibility would allow states to address specific environmental problems more effectively.

Consideration of an environmental SRF model poses certain issues which must be discussed and addressed at various levels. These would undoubtedly include management and administration, technical capability, financial capability, and legislative or legal issues.

Because of the more complex nature of an environmental SRF, management of the programs could be more involved. Consideration must be given to the possibility of dealing with complex issues such as land acquisition, conservation easements, and perhaps projects which cross state lines or EPA regional boundaries, to mention a few. Some states may lack experience in dealing with grassroots or community based groups, or private businesses. A broader range of projects could mean a larger administrative burden in staff time and range of knowledge.

A significant issue would be development of applicable models to evaluate and prioritize a broader base of environmental projects. It may be necessary to obtain relevant technical data, such as environmental and health reports, in formats which vary from those currently available. It may be necessary to take innovative approaches to the development of priority lists, priority ranking for watersheds, or some other method to provide funding for projects which are not compliance driven.

Financial issues to be considered include the adequacy of present funding levels, and their sufficiency in addressing smaller or non-compliance based projects. It would be necessary to attempt to identify any types of projects which may threaten program solvency or present it with other risks. It may be necessary to develop innovative financing mechanisms, such as SRF "block loans" or "block grants" to interrelated projects, short-term interest free loans for planning, design and construction, or technical assistance for disadvantaged communities. Exploration of other funding sources, including incorporation of state/federal agency partnerships where SRF, RD and CDBG agencies work together, and co-funding with other federal agencies, should be considered.

A significant financial issue is that of "Private Activity" under the applicable State Volume Caps for tax-exempt bonds. Expanding to an environmental SRF model and broadening the scope of possible borrowers could involve an increase of eligible private borrowers, as was the case with the inception of the Drinking Water program, for which private water companies are eligible participants. Although eligible, private companies may be all but excluded from the available programs due to lack of an allocation. Alternatives, from increasing the formula for computation of each state's volume cap, to exclusion of public purpose projects undertaken by an environmental SRF, should be considered.

Finally, there could be substantive legislative issues to be addressed. From a practical standpoint, the simplest and most timely approach to developing an environmental SRF model is that it be based upon existing federal legislation. At the state level, some states may need legislation to authorize loans and grants to private, non-profit, or individual borrowers. In addition, some states may be tempted, during any legislative process to mirror the scope of a broadened federal program, to add restrictive criteria in order to avoid funding certain projects which are sensitive in that state.

Crucial to the development of a model environmental SRF is an analysis of the "willingness to proceed" at both state and federal levels. As is the case in the development of many other programs, most administrative, management and technical issues may be overcome through a process of analysis and definition of the problem, and providing additional resources. However, without a desire on the part of the participants to move forward, the lack of "will" is certain to deter any meaningful resolution of more easily resolved management issues.

From a state's perspective, such issues may include:

- Willingness to fund a broadened range of projects, and to accept a more complex and larger administrative and technical burden;

- Willingness to modify legislative ability to encompass funding borrowers with higher credit risk, or private borrowers;

- Avoiding the temptation to add restrictive criteria to state legislation, in order to avoid funding certain types of projects which may be sensitive in that state;

- Additional state match;

Although many SRF's have become successful collaborative efforts of state and federal governments, personnel, and financial resources, there continue to be conflicting viewpoints on oversight and management of these programs. States have developed various leveraging structures and subsidy levels to tailor SRF programs to meet their specific needs. Recently, many states have addressed issues of cross-collateralization and transferability of funds. Although attempts to customize programs is sometimes met with resistance at a federal level, the fact that some states have received approval to finance projects relating to leaking underground storage tanks and brownfields remediation provides a ray of optimism.

EPA flexibility is crucial to the development of an environmental SRF model, as it demonstrates the willingness to proceed at a federal level. In this regard, it is promising that the agency already acknowledges the ability of a state's CWSRF and DWSRF to finance certain non-point source projects, such as solid waste, to cross-collateralize and transfer between funds, and to finance land protection. Indeed, the agency is actively encouraging loans to nonpoint projects through the use of integrated intended use plans.

Other issues which relate to the willingness to proceed, at a federal level are:

- Federal willingness to address issues relating to private activity volume caps, including

increases in state caps and adopting for certain qualified uses, exemptions from the cap;

- EPA approval of diverse financing and bond leveraging techniques, and development of incentives to encourage broader funding approaches, such as longer loan terms, removal of administrative burdens, less restrictive set-asides and more state flexibility;

- Willingness to develop potential alternatives to the present population-based allocations and to the innovative approaches to development of priority lists;

- Ability to take a broader perspective to SRF monies, and to consider and encourage partnerships with other federal agencies which may provide monies for like projects;

- Willingness to more actively pursue enforcement as a means of achieving better water quality;

- Overall willingness of EPA to increase flexibility, and improve cross-regional cooperation;

The development of an environmental SRF model is an exciting concept which deserves further evaluation and consideration. It would provide significant opportunities for states to provide one-stop shopping to a variety of borrowers seeking financing for environmental projects. It also provides an opportunity for a collaborative effort to use federal and possibly additional state funding from a variety of sources to achieve the goal of improved water and air quality.